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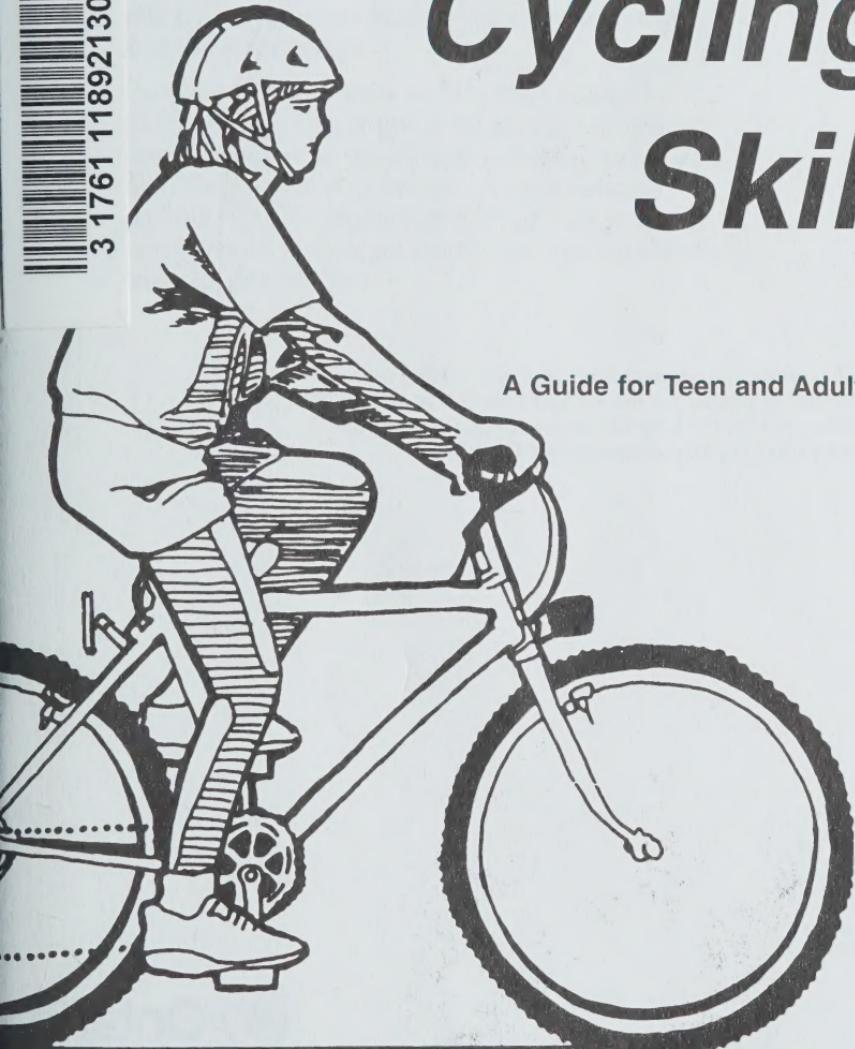
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Cycling **Skills**

A Guide for Teen and Adult Cyclists



This publication was adapted from the book "City Cycling Skills" ©1985 published by the Toronto City Cycling Committee, with the support of the City's Planning and Development Department and the Department of the City Clerk.

Introduction

Cycling is a fun, healthy and inexpensive way to get around, whether you cycle to and from work, or just tool around on the weekends. But cycling can be hazardous, unless your bicycle handling and traffic skills are in good shape.

This booklet is your guide to bicycling safely. If you're new to cycling it provides an easy to follow, step-by-step guide to the bicycle handling skills and traffic skills you need. If you're an experienced cyclist, but still feel uncomfortable cycling in traffic, or are unsure of your legal rights as a cyclist, there's information for you too.



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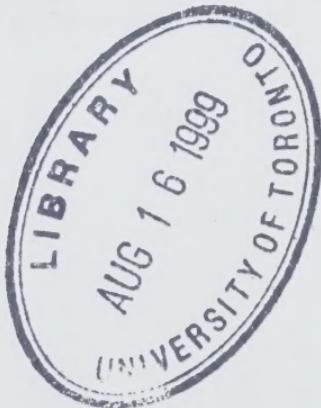


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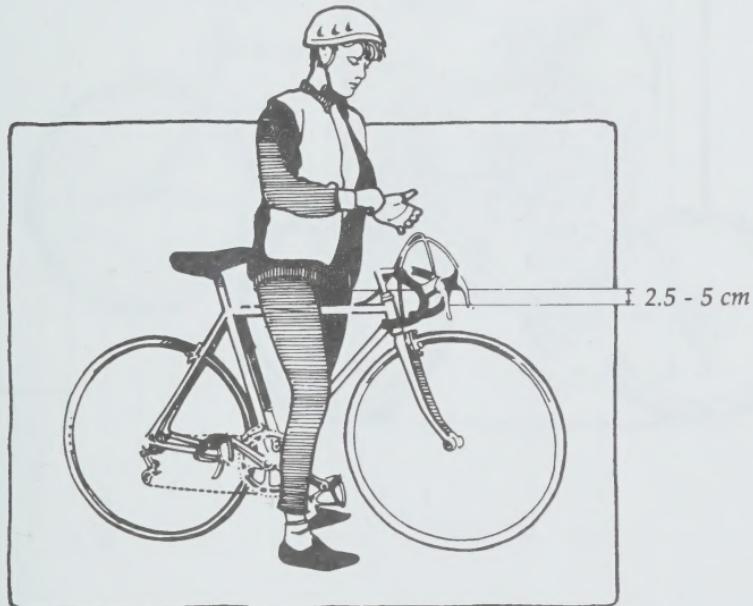
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A bicycle that fits properly is easy to control, comfortable to ride and doesn't hurt your knees.

Check these key fitting points on your bicycle.

Frame Size

You should be able to stand flat-footed over your bicycle frame without your crotch touching the frame. To check a mixte (woman's frame) sit on the seat. The base of the seat should be at least 5 centimetres above the seat tube when the tips of both feet touch the ground.



frame clearance

Seat and Handlebar Stem Height Adjustment

When you sit on the saddle with your heels on the pedals, your legs should be almost straight at the bottom of the pedal stroke. In a normal riding position your weight should be evenly balanced, allowing you to rest your hands lightly on the handlebars.

Your handlebar stem and seat post must be inserted at least 5 centimetres into the frame. Both usually have a mark that indicates the maximum extension point. Longer seat posts and stems are available if you need them.



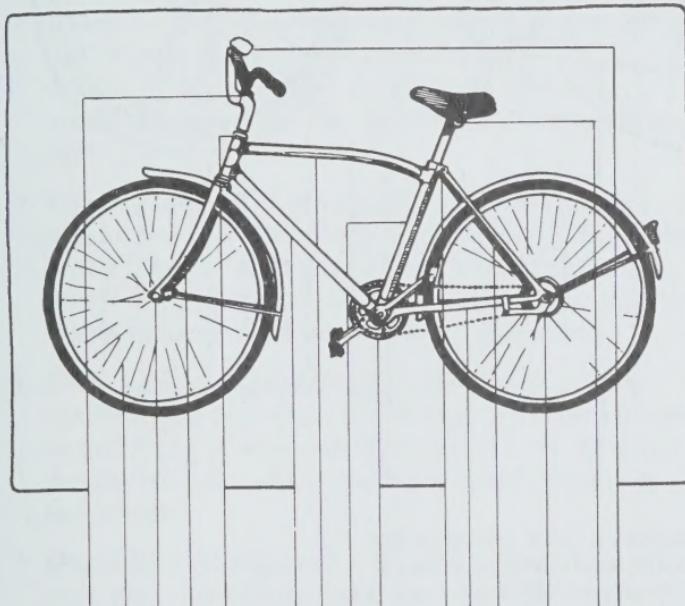
The Safety Check

2

Every cyclist needs to know how to tell when his or her bicycle is unsafe to ride and needs repair.

Refer to the basic bicycle safety checklist on page 5. The following two diagrams will help you to identify the parts on your bicycle.

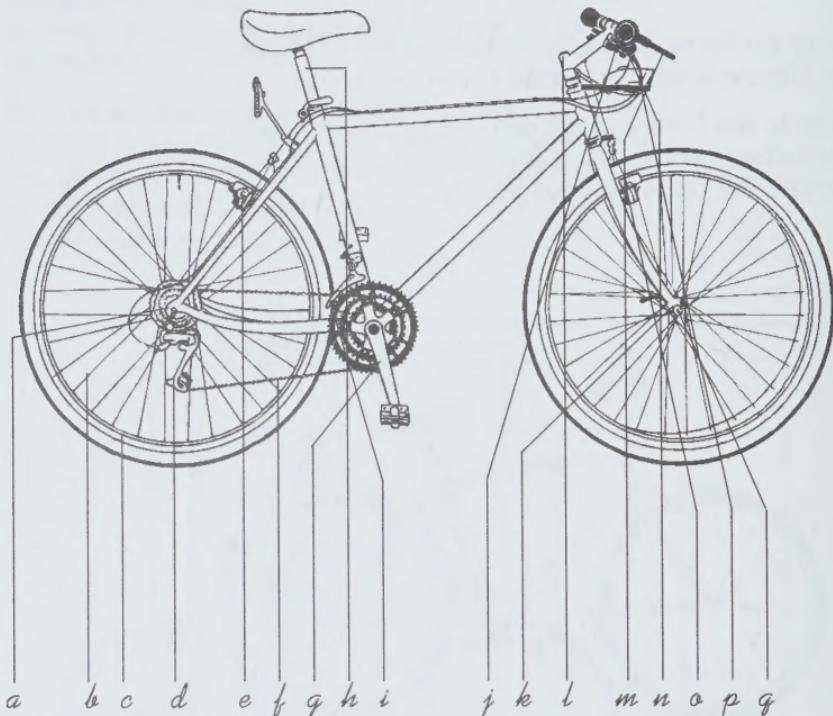
Coaster



a. handlebar stem bolt b. spokes c. axle d. fork e. headset

f. down tube g. top tube h. seat tube i. crank set j. seat post bolt
(binder bolt) k. chain stay l. seat stay m. coaster brake rear hub
n. seat bolt o. bell.

Mountain Bike

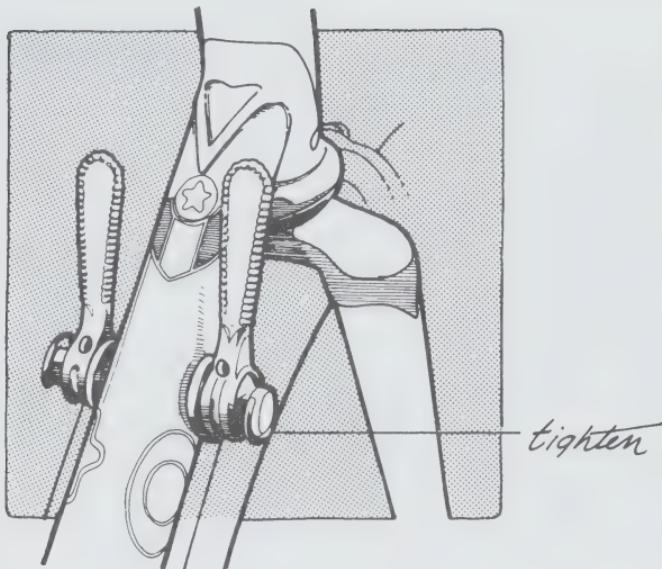


- a. rear dropout
- b. spokes
- c. rim
- d. rear derailleur
- e. rear brake and brake bolt
- f. chain
- g. crankset
- h. seat post
- i. front derailleur
- j. shifters
- k. front axle
- l. handle bar stem and bolt
- m. brake lever
- n. bell
- o. front brake bolt
- p. light
- q. front dropout

Basic Bicycle Safety Checklist:

- **Bolts** – Check that bolts on the seat, seat post, handlebar stem and axles are tight.
- **Headset** – Check that it turns freely and doesn't rattle.
- **Brakes** – Check that the nuts on the brake bolts are tight. Brake pads should not touch the rims unless you are squeezing the brakes. Also check lever looseness and lever travel. Levers should stop at least 2.5 centimetres from the handlebars when the brakes are fully applied.
- **Axles** – Check bearings for looseness by shaking the wheel side to side. Check for tightness in dropouts (see diagram on page 4). Make sure quick release levers are clamped, not screwed tight.
- **Chain Slack** – On ten-speeds, a chain that sags means the rear derailleur needs repair. On coaster brake bikes or hub-geared bikes, if there is more than 6 millimetres of sag in the chain, the rear hub needs to be moved back in the frame slots.
- **Shift Levers** – Derailleur levers should move easily when you shift, but not at all when you are not shifting. A screw or butterfly nut or similar device lets you adjust the ease of movement of the levers.
- **Derailleur Movement** – On derailleur bikes make sure your derailleur does not throw the chain right off the sprockets.

shift-levers



- **Tires** – Inflate to the recommended tire pressure as shown on the tire.
- **Spokes** – Check for and replace loose, bent or broken spokes.
- **Wheels** – Make sure wheels are centred in the forks and not touching the brake blocks. Check the rim for side-to-side wobbles and up and down hops by watching the wheel spin past the brakes or frame. More than an eighth of an inch of wobble is cause for concern.
- **Coaster Brakes** – Check that the bolt holding the brake arm to the frame clip is tight.
- **Helmet** – Make sure that your helmet meets safety standards (CSA, Snell, etc.) and has not been used in a collision.

Bicycle Helmets

3

An approved bicycle helmet can greatly reduce the risk of permanent injury or death in the event of a fall or crash.

The best helmet is one which fits properly, is worn correctly and has been manufactured to meet strict safety standards. A good helmet will come with a Canadian Standards Association (CSA) or Snell Memorial Foundation sticker inside, and may meet other standards as well. Hockey or other types of sports helmets are not recommended for cycling since they're designed and tested for other types of impact.

To provide maximum protection, the helmet should fit level and square on the head. The front should cover the forehead. It should sit snugly on your head and not slip when the head is moved, even before the chin strap is fastened. Sizing pads are provided which can help fine tune the fit.

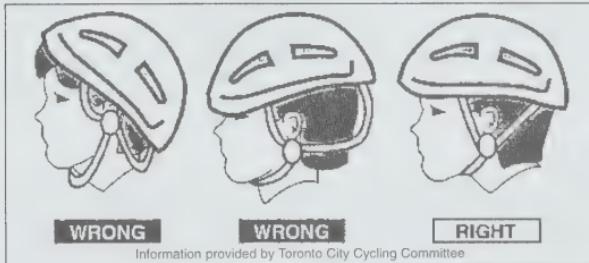
The straps should be adjusted to meet just below the ear, and fastened comfortably.

Remember that different helmets are made to fit heads of different shapes, so make sure you try on several before choosing.

The helmet works by absorbing the forces of a crash, so if the helmet has been in a collision, it has done its job and should be replaced, even if there is no visible damage.



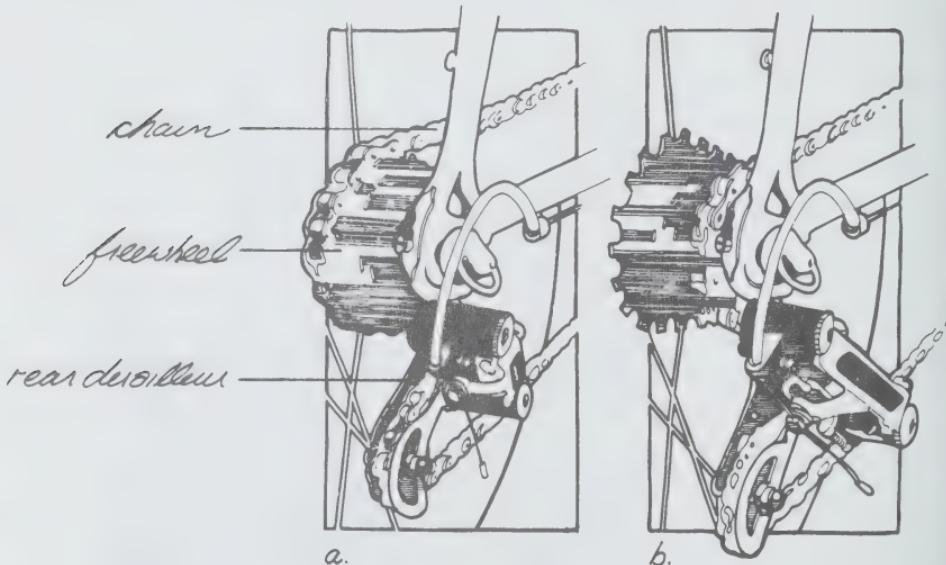
As of October 1, 1995, it is the law in Ontario for every cyclist under the age of eighteen (18) to wear an approved bicycle helmet.



Handling skills are best practised away from all traffic in a large, flat, deserted area. An empty parking lot is ideal.

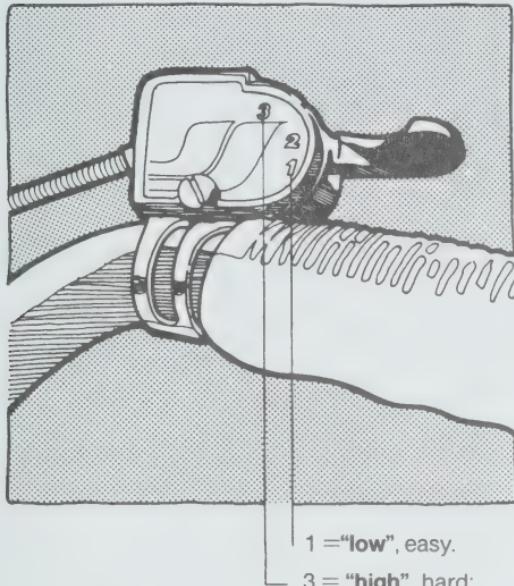
Selecting the Right Gear

Handling skills are easier to learn in a low easy gear where the legs rotate quickly. Fast leg rotation provides better balance, less fatigue and more speed.



On a geared bike, a) is the "lowest", easiest gear. b) is the "highest", hardest gear. REMEMBER outside = "high", hard; inside = "low", easy.

three-speed shifter



Shifting Gears

On a hub geared bicycle or a derailleur bicycle, smooth gear shifting is a key skill. Refer back to *Selecting the Right Gear* on page 8.

Basic Rules for Gear Use

- Shift into a low, easy gear before you stop.
- Use low, easy gears when going up hills. Shift into lower gears before you begin to work too hard.
- Use higher, harder gears when you begin to bounce on the saddle from pedalling too fast.
- On the level, use a gear that gives you fast, easy leg spin – about 70 to 100 rpm.
- On a derailleur bicycle always pedal forward while shifting gears.
- Avoid pedalling slowly and pushing hard in your highest gears. This can cause knee problems.

Riding Slowly

The slower you go, the less stable your balance is on a bicycle. Try all the above manoeuvres at slow speeds. Mastering these skills at slower speeds can help avoid spills.

Getting On and Off

Being able to get on and off the bicycle smoothly lets you start and stop safely. Practise your starts from beside the bicycle and from straddling the bicycle. Practise stopping and straddling the bicycle, and stopping and getting right off the bicycle. If practising on the road, dismount on the curbside.

Straight Line Riding

Riding in a straight line is the key to riding safely in traffic. Practise by following a painted line in a parking lot. Because you maintain balance by turning the front wheel slightly from side to side as you pedal, riding within a path 15 centimetres wide is very good. Try not to move your upper body as you pedal; let your legs do the work.

Shoulder Checking

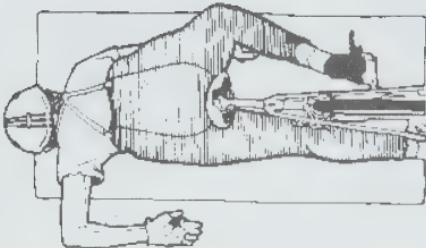
“Shoulder checking” involves looking back over your shoulder to see what the traffic behind you is doing. This manoeuvre is vital for making safe turns in traffic. It is also difficult to do without wandering from a straight path. Practise riding in a straight line while checking behind you over both shoulders.

Signalling

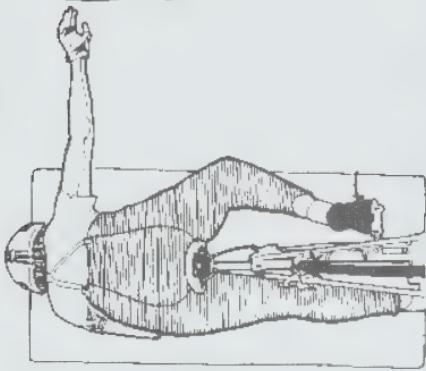
Making signals requires being able to ride with only one hand on the handlebars. Because it is very easy to go off course when riding one-handed, practise signalling while riding along a straight line. Keep both hands on the handlebars while actually turning.

Sequence Practice

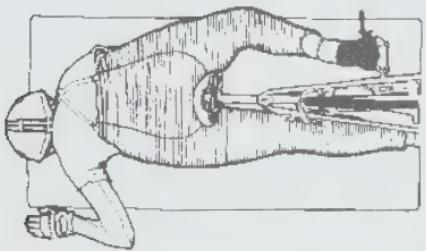
Practise shoulder checking before signalling to make turns. Before stopping, signal, then use both hands on the brakes to stop.



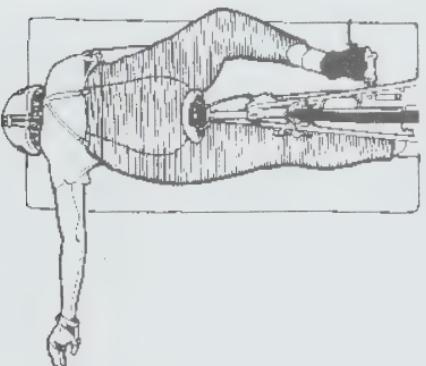
STOP: left arm out
down, palm back.



ALTERNATIVE
RIGHT TURN:
right arm out.

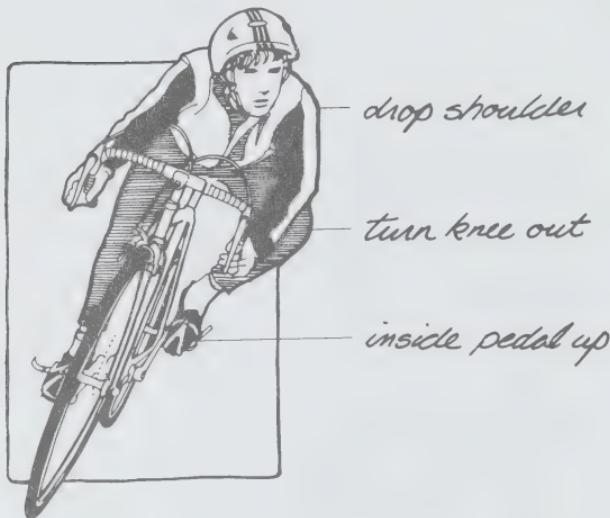


RIGHT TURN:
left arm out, up. RIGHT TURN:
right arm out.



Turning

Turning accurately can also be tricky. Practise doing figure eights. Try to follow the same path each time you make the figure. Then, gradually tighten the turns. For more stability in turns, drop your inside shoulder, keep the inside pedal up and turn the inside knee out in each turn.



Slalom Riding

Slalom riding is an exhilarating way to practise quick and accurate turns. Pick a straight line in the parking lot. Swoop from side to side along the line making bigger swoops and smaller swoops. Throw your body into each curve, keeping your inside knee out and your inside shoulder down.

Emergency Handling Skills

The first step in accident prevention is to scan the road ahead for potential accidents. Steer clear of debris and holes in the pavement. Learn to anticipate errors by motorists, pedestrians and other cyclists. Don't assume they see you. When in doubt use caution.

No matter how skilled or careful a rider you are, you will encounter hazards that leave you little time to react. Emergency handling skills such as dodging obstacles, instant turns, and emergency braking will enable you to avoid these hazards. Practise them in an empty parking lot or a school playground.

Dodging Obstacles

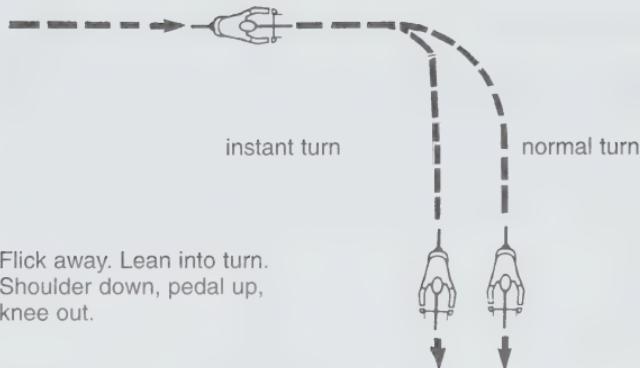
You must react quickly to obstacles such as manhole covers and sewer grates without straying wildly from your path. To practise this, ride along a straight line at an "obstacle", such as a piece of cloth. Avoid it by dodging around it quickly and then get back onto your line as fast as possible.



Flick front wheel. Swerve around. Go back on line.

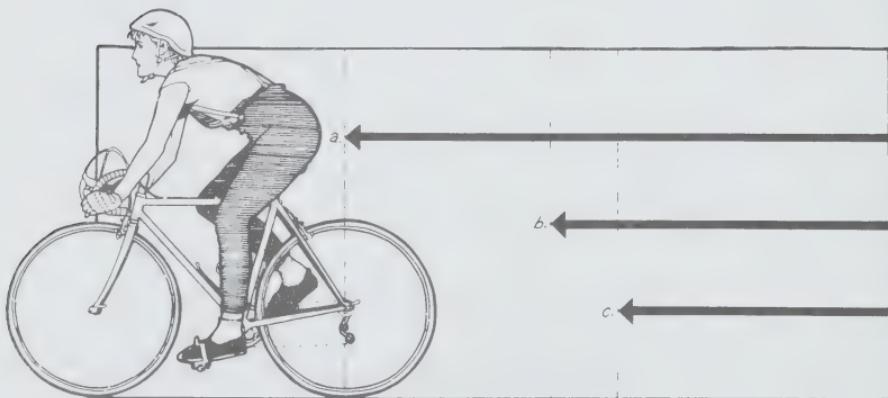
Instant Turns

Instant turns are the fastest way to change course or to take a corner. They are also a good way to avoid accidents, as long as the road is dry. As you approach the turn, flick the front wheel away from it, then lean hard into the turn with your inside pedal up, your inside knee out and your inside shoulder down.



Hand Brakes

On a bicycle equipped with front and rear hand brakes, the front brake does 80 per cent of the braking. Use of the rear brake helps to keep the bicycle under control. So, to stop effectively, you must use both brakes.



stopping distance; a) rear brake alone b) front brake alone
c) 80 percent front/20 percent rear.

Coaster Brakes

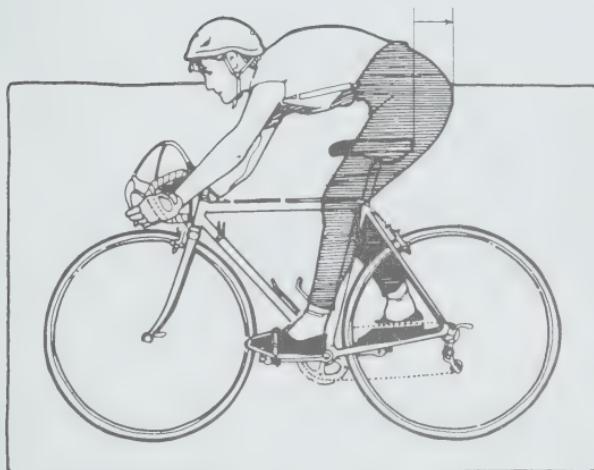
Coaster brakes are located in the rear hub. They are applied by pedalling backwards.

Emergency Braking

Quick stops can be crucial in emergencies. You must use both brakes. But if you put on the front brake too hard you might go over the handlebars.

Apply the front brake harder than the rear brake. Let up on the front brake if the back wheel starts to skid. Try riding towards a specific point, and see how fast you can stop without going past the point. Brake in a straight line without swerving.

For better braking control, shift your hips back on the saddle and get low over the frame as you brake. This counteracts the normal forward weight transfer caused by hard braking.



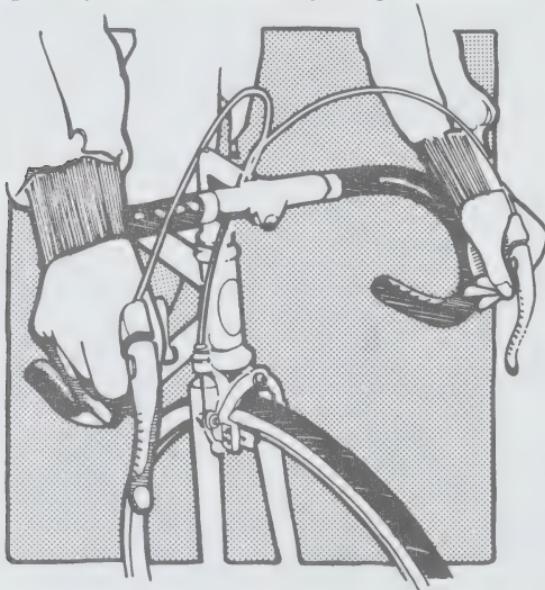
hips back, stay low

Riding Standing Up

Learning to ride standing on the pedals is very important. This position gives you power to get up hills. It gets you going from stops and it lets you see what is ahead. Eventually your balance may become better standing on the pedals than sitting on the saddle. Stand up over bumps, railway and streetcar tracks.

Remember

To develop cycling skills, and to gain confidence while riding in traffic, consider taking a cycling training course such as the 'CAN-BIKE' course developed by the Canadian Cycling Association.



An Overview

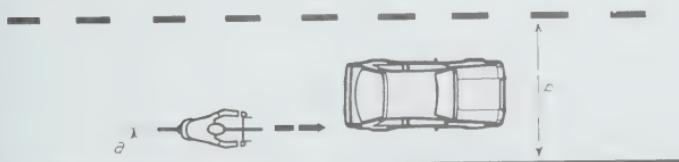
Rules of the Road

The Ontario Highway Traffic Act defines the bicycle as a *vehicle* which belongs on the road. Riding on the road means mixing with other traffic. This is only safe when all traffic uses the same *rules of the road*.

When everyone operates under these rules, actions become more *predictable*. Drivers can anticipate your moves and *plan* accordingly. Likewise, you too can *anticipate* and deal safely with the actions of others.

Special Nature

The bicycle differs from most other vehicles in two important ways. First, the bicycle is very narrow. Consequently, where most vehicles use a full lane, the bicycle uses only a fraction of a lane.



(Cyclist) Lane fraction. (Car) Full lane.

Second, the bicycle is often slower than most other vehicles. In urban areas, cyclists generally move at one-third to two-thirds the speed of the traffic around them, except where traffic congestion slows

cars and trucks down. However, in rural areas, or on faster roads the difference is much greater. How a cyclist manoeuvres in traffic will depend on his speed in relation to motorists.

Where do you Ride?

Because of the special nature of the bicycle, there are two rules of the road to which cyclists must pay special attention.

1. slower traffic *stays right*.
2. slower traffic *must give way to faster traffic* when safe and practical.

These rules generally apply this way: cyclists should ride close to the right hand road edge when it is safe to do so, unless they are turning left or going faster than other vehicles.

Check for local regulations that affect where you may cycle in your municipality. Bicycles are prohibited on some provincial highways (See chapter 9).

When Going Straight

When going straight ahead, use the right-hand through lane. Stay at least half a metre from the curb to avoid curbside hazards and *ride in a straight line*.



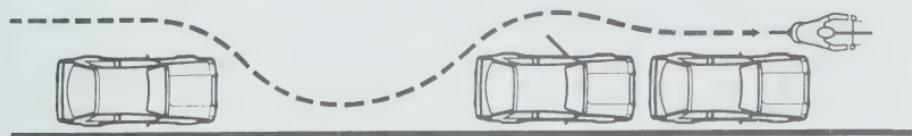
Ride straight. One-half metre. Avoid drain grates, glass, manhole covers and other hazards.

Around Parked Cars.

Ride in a straight line at least one metre away from parked cars to avoid opening car doors. Keep to this line even if the cars are far apart to avoid continuous swerving and to keep yourself in the motorist's line of vision.



Use straight path. One metre from parked cars.



No.

Which Lane?

The lane you take depends on your speed relative to other traffic. *Slower traffic stays right*, in the curb lane.

Taking a Lane

In urban areas where a curb lane is too narrow to share safely with a motorist, it is legal to take the whole lane by riding in the centre of it. This is safer than riding near the curb which may encourage motorists to squeeze by where there isn't sufficient room.

If you are uncomfortable in the centre of the lane, take an alternate route. On high speed roads, it is not safe to take the whole lane.



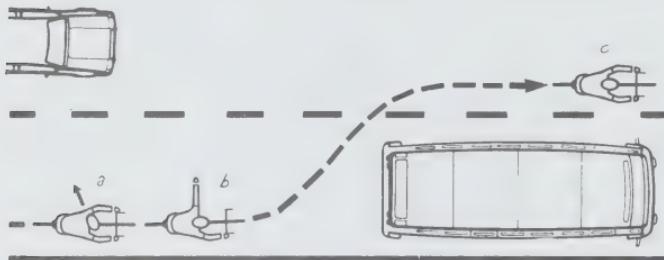
Ride in lane centre when lane is too narrow to share or it is dangerous by curb.

Changing Lanes

When changing lanes, remember that *vehicles in the other lane have the right-of-way*. The person moving into a new lane must always wait for an opening. Try to make eye contact with motorists to ensure that they have seen you and know your intentions.

Changing Lanes to the Left

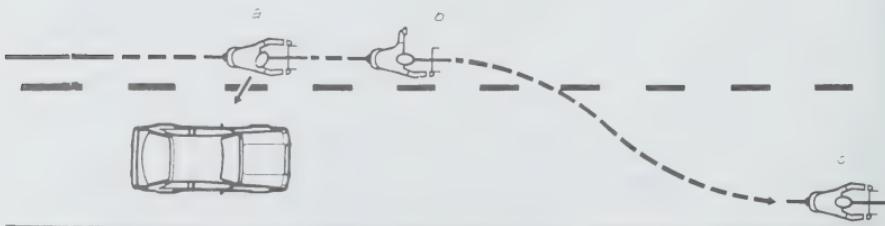
To *move left* one lane, shoulder check on your left to find an opening, signal your move with a left turn signal, then go to the right-hand side of the new lane when an opening appears.



a. Shoulder check b. Signal. c. Go.

Changing Lanes to the Right

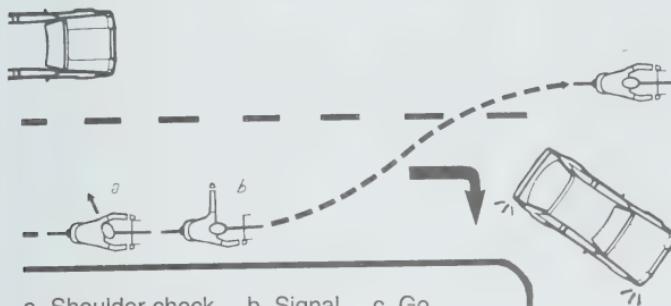
The vehicle in the right lane has the right-of-way. To *move right* one lane, shoulder check to your right to find an opening, signal for a right turn, then move into the opening. Go to the right-hand side of the new lane unless hazards indicate otherwise.



a. Shoulder check b. Signal. c. Go.

Right-Turn-Only-Lanes

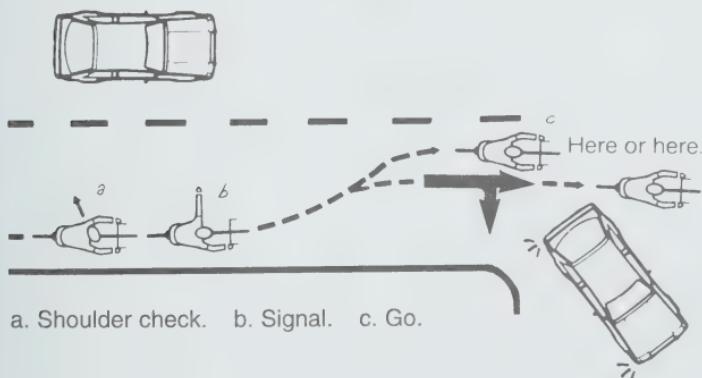
When the curb lane becomes a right-turn-only-lane, to go straight, change lanes to the right through lane. Shoulder check, signal, then go to the right side of the new lane when an opening appears. Continue straight through the intersection.



a. Shoulder check. b. Signal. c. Go.

Straight/Turn Lanes

When a lane presents the option of turning or going straight through, *to go straight* take the middle or through edge of the lane.



a. Shoulder check. b. Signal. c. Go.

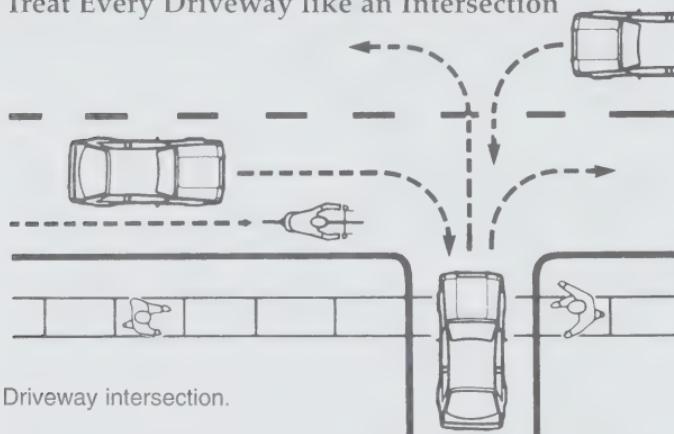
Going Through Intersections

Intersections are more numerous than most people think, and are places where many collisions occur, so stay alert.

Any point where the paths of two vehicles can cross is a potential intersection. Often residential areas contain many “mini-intersections” where driveways and alleys enter streets.

Stay at least one metre from curbs in residential areas so that drivers about to enter the road can see you, and you can see them.

Treat Every Driveway like an Intersection



Stay one metre from curb.

Right-of-Way

Right-of-way determines who goes through an intersection first. Before proceeding into an intersection, give way to pedestrians and vehicles already in the intersection or approaching the intersection so closely that it would be hazardous for you to proceed.

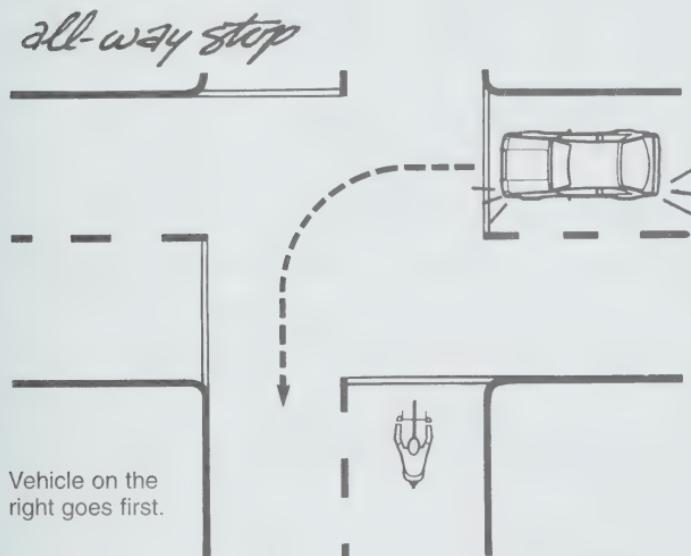
The following outlines the right-of-way at intersections with and without traffic controls:

No Traffic Controls

When you approach an intersection without traffic control signals, stop signs or yield signs at the same time as another vehicle, yield the right-of-way to the vehicle approaching from the right.

All-Way Stops

At intersections with all-way stops, the first vehicle to come to a complete stop should have the right-of-way. If two vehicles arrive at an intersection and complete their stops simultaneously, the vehicle on the right has the right-of-way.



Why Be Careful in Intersections?

In an average year in Ontario, almost 60 percent of cycling crashes happen in intersections. Obey signs and traffic signals, yield the right-of-way properly and always watch for turning vehicles.

Traffic Signal Intersections, From a Stop

If you stop at an intersection and want to go straight through, take the middle of the right-hand through lane. Move back to the right side of the lane as you clear the intersection. This way cars in your lane cannot turn right across your path.

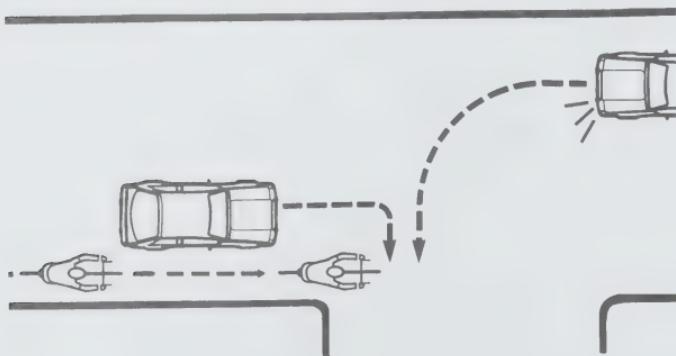
Moving Through Traffic Signal Intersections

When the light is green, move quickly through the intersection. The longer you are in the intersection, the greater your exposure to hazards.

There are three rules for safely crossing intersections.

1. watch for vehicles turning across your path and be prepared to avoid them.
2. always enter intersections either ahead of or behind cars. If you enter the intersection beside a car you may not see its turn signals and the driver might not see you.
3. always watch for traffic signal changes and be prepared to stop if you are not yet into the intersection.

Stay behind or ahead of vehicle. Watch for turning cars

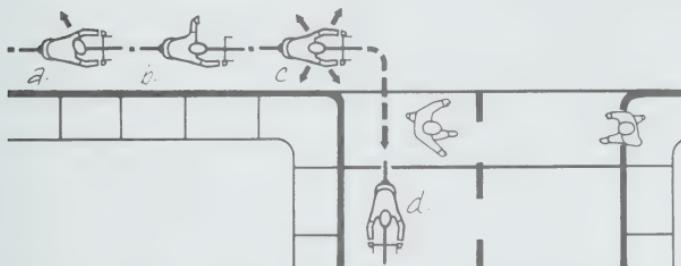


Right Turns

Right hand turns are simple. Well ahead of the turn, get to the right-most lane, since you must turn from the right hand curb side to the right hand curb side. Shoulder check for overtaking traffic, then signal the turn.

Scan the intersection for pedestrians. They have the right-of-way; wait for them to clear your path.

You must also stop for red traffic signals and stop signs before turning. Turn when your path is clear and no cars coming from your left will be in the intersection as you make your turn.



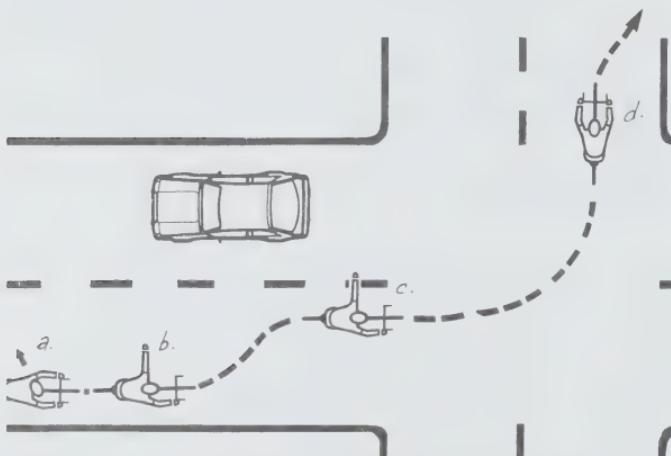
a. Shoulder check. b. Signal. c. Scan. d. Turn when path is clear.

Left Turns

Left turns intimidate many cyclists. They are undoubtedly the most complex traffic manoeuvre a cyclist will make.

There are three basic ways to turn left at an intersection, depending on your cycling skill, the volume, and speed of traffic.

- **Pedestrian Turn** – Walk the bicycle across the pedestrian crosswalk. Even experienced cyclists sometimes do this, depending on traffic conditions.
- **Perimeter Turn** – Ride across the intersection, dismount, turn the bicycle, remount and proceed when conditions are right. Avoid riding in a crosswalk.
- **Vehicular Turn** – This is normally the most convenient way to turn left except where traffic is so congested that it is difficult to get into position before the turn. Vehicular style turns can be relatively simple on quiet residential streets but they require more cycling skill on multi-lane roads.



a. Shoulder check. b. Signal. c. Go to road centre. d. Go when clear.
Shoulder check. Signal. Return to right side.

On rural or high speed roads you should time your left turn so that you can complete the whole turn at once without affecting motorists. You don't want to get caught in the middle of high speed traffic. If necessary slow down or stop at the right edge of the road and wait until you get a large enough gap in traffic to make your turn safely. If the traffic is heavy without a sufficient gap, continue on to the intersection and do a perimeter or pedestrian turn.

Two lane Streets

When there is a single lane each way, plan early. Shoulder check, signal, wait for space, then go to the right of the road centre at the entrance to the intersection. Signal, waiting for opposing traffic to clear. Complete the turn before moving back to the right road edge.

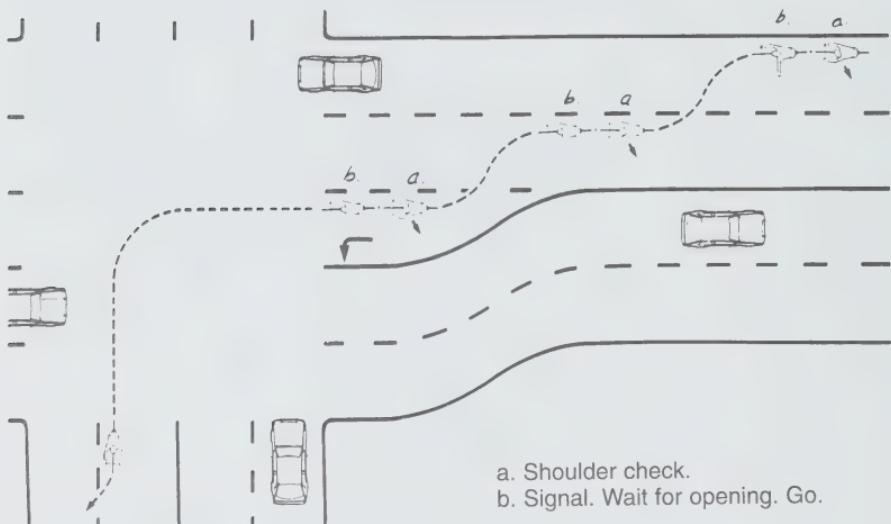
Multi-lane Left Turns

Two possibilities exist: moving to a separate left turn lane, and using multiple left turn lanes. Both require the cyclist to move over lane by lane to get to the appropriate turning position. These manoeuvres can be quite complex and require specific cycling skills.

A cyclist must be able to shoulder check without swerving, judge gaps in traffic, signal intentions to motorists, and move decisively and quickly when safe to do so. You can develop these skills by practising on quiet streets first. As you gain confidence and skill you will find it easier to turn left on busier streets.

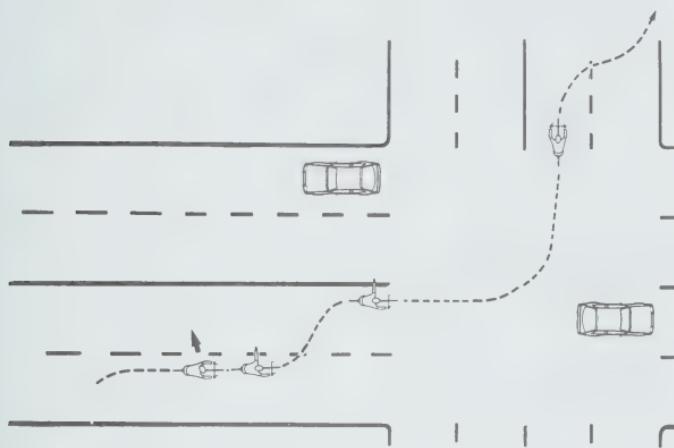
- **Separate Turn Lane** – Move lane by lane to the turn lane by shoulder checking, signalling, finding a break in the traffic and moving left. Wait to turn at the right-hand side of the left turn lane or at the lane centre if the lane is narrow. Go when the oncoming traffic is clear, and the traffic signal is green.

- **Multiple Turn Lanes** – When more than one left turn lane exists, use the turn lane at the extreme right. Use your lane-changing skills to get to this lane. If it is a lane where everyone turns left, stay to the right side of the lane. If most traffic goes straight through in this lane, stay to the left side.



Completing a Left Turn

Always complete your turn into the equivalent of the lane you turned from. Once the turn is complete, shoulder check, signal and move over lane by lane to the right, as close to the curb as is appropriate for the road conditions.



Move to equivalent lane. Shoulder check right. Signal. Wait. Go.

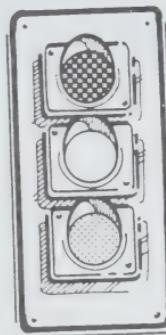
Signs and Traffic Signals

Get to know them by shape and colour

Stop Until
Intersection
is Clear



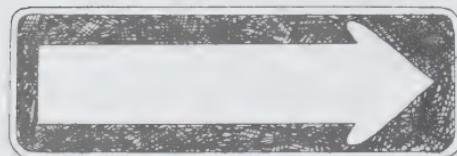
Slow Down
Stop for
Cross-Traffic



Red –
Stop

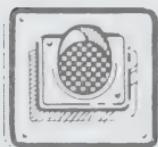
Amber –
Stop

Green –
Go



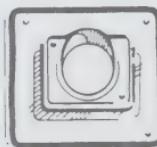
One-Way Street
Go only in direction of arrow

Flashing Red



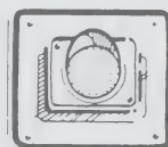
Stop, Go
When Clear

Flashing Amber



Slow Down,
Go Carefully

Flashing Green



Go Ahead
When Clear

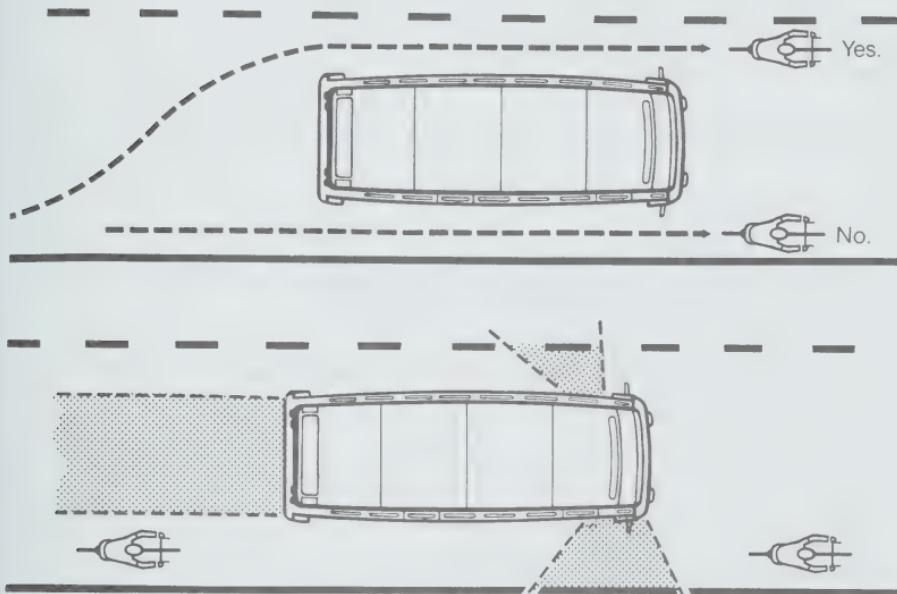
Dealing with Buses and Trucks

Blind Spots

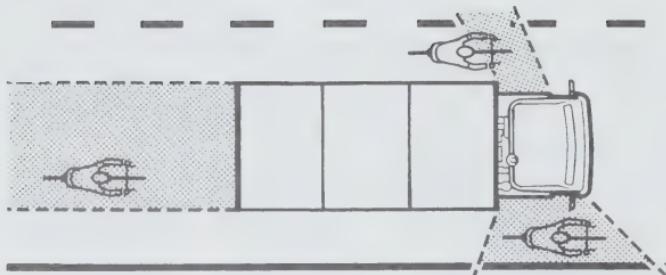
Bus and truck drivers have large blind spots where they are unable to see passing vehicles, particularly bicycles. Stay out of the blind spots.

If you can see the driver's eyes in his mirror, then he can see you. Try to catch his attention, or stay well ahead, or well behind his vehicle.

Pass buses and trucks driving in the curb lane *only on their left*.



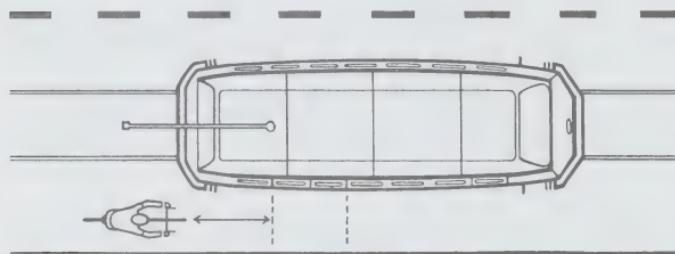
Stay well ahead. When behind, let the driver see you.
Stay out of the blind spots.



Stay out of blind spots, except when passing.

Streetcars

By law, you must pass streetcars on the right. When they stop to pick up or let off passengers, you must stop two metres behind the rear door until all passengers are in the car or on the sidewalk. If a safety zone has been designated for the passengers, this law does not apply.



School Buses

All drivers when approaching a school bus that has its upper alternating red signal-lights and stop arm flashing must stop unless they are on a highway divided by a median strip.

If you are overtaking a stopped school bus with upper alternating red signal-lights and stop arm flashing on any highway, you must stop at least 20 metres behind the bus.

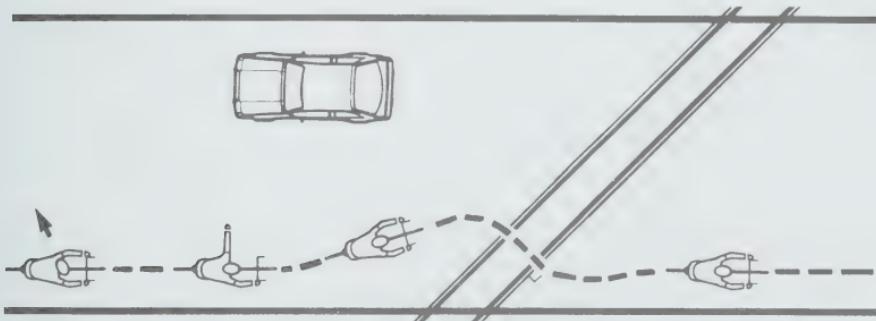
You may proceed only when the school bus moves or the upper alternating red signal-lights have stopped flashing and the stop arm is retracted.

Streetcar and Railway Tracks

Streetcar and railway tracks are very dangerous. Crossed at the wrong angle, they can spill you and wreck your bicycle wheels.

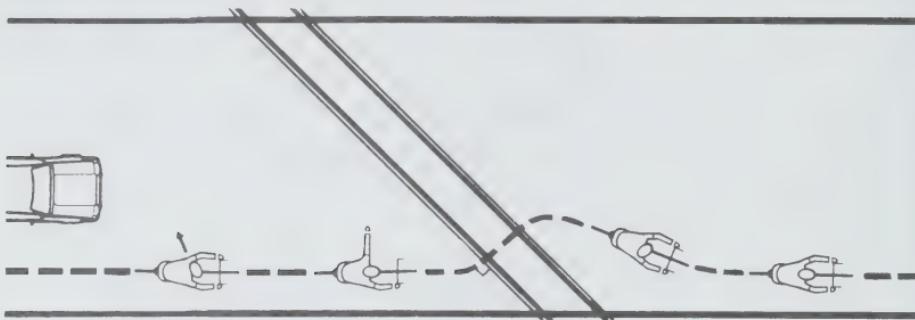
Always cross tracks at right angles. Plan your crossing well ahead of time and put yourself into the best road position to make a right-angle crossing.

If the tracks are at an angle to the road, you may need an entire lane. Use hand signals to slow traffic behind you and give you room to cross the tracks safely. Go slowly and stand on the pedals over particularly bumpy tracks.



Shoulder check. Signal. Move left. Cross at right angle.
Move back by curb.

If it is too difficult to cross the tracks safely, dismount and walk your bike across instead. Even at slow speeds diagonal tracks can spill you.



Plan for tracks. Shoulder check. Signal to drivers behind. Cross at right angles. Shoulder check. Signal. Move back by curb.

Where tracks run parallel to the direction of vehicle travel, lane changing and left turns become extremely hazardous. Wait for breaks in traffic and cross the tracks at right angles. At tracked intersections where traffic is heavy and you want to turn left, walk your bike in the crosswalk.

Surface Problems

Surface hazards exist on every street, but they are most common close to the curb, where much of your riding is done. Cyclists must always watch for:

- **Holes and depressions** that can buckle wheels or throw the rider. Avoid them with gradual course changes or the obstacle dodging technique (refer to page 13), or go through them slowly. Look for sunken manhole covers, sewer grates and potholes.

- **Loose or slippery surfaces** can spill you. Go over them slowly and corner carefully, keeping the bicycle as upright as possible. Specifically, watch for sand, gravel, mud, dirt, oil, water, fallen leaves and freshly painted lane lines.
- **Raised surfaces** can buckle wheels and throw you out of control. Use the obstacle dodging technique to avoid them, or take them slowly and carefully. Look out for raised grates, manhole covers, tracks, speed bumps, stones, driveway entrances, raised lane markers and reflectors.
- **Sharp objects** cut or puncture tires, sometimes causing blowouts that result in spills or crashes. Watch for nails, tacks, glass, staples, wire, pins, sharp rocks and sharp pieces of metal.

When a tire goes flat, slow down gently to a stop, then walk your bike to avoid spills, and ruined tires and rims. Be prepared. Flat tires are the most common bicycle problem. Carry a spare tube, tire irons, pump and repair kit.

Riding on Sidewalks

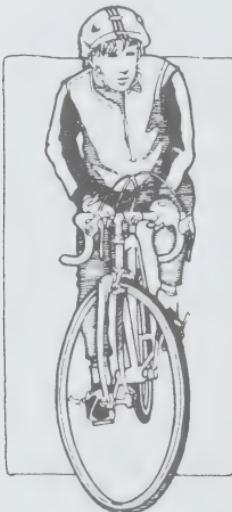
In some Ontario communities, only bicycles with 61 cm (24 inch) or smaller wheels may be ridden on the sidewalk. Be sure that you know and obey your local by-laws concerning sidewalk riding.

If you ride on the sidewalk, always yield to pedestrians. Also be very careful when riding off the sidewalk onto the street. Look for and yield to vehicles on the road. Walk your bicycle in pedestrian crosswalks, or crossovers.

Wet Weather

Wet weather makes roads slippery. Light rain brings oil to the surface of roads, making them especially treacherous. Heavy rain means wet rims and poor braking. You need to ride differently in the rain because of these factors.

- **Braking** – Most bicycle brakes work poorly in the rain. If you have steel rims, ride slowly and apply brakes gently at least 50 metres from intersections. Brake hard only after your brakes start to grab. Try your brakes out in the rain on a deserted street to discover how they work when wet. Aluminum rims provide the best wet weather braking.
- **Cornering** – You have less traction on wet roads, so corner slowly with little leaning.



Corner without leaning in wet weather.

- **Puddles** – Puddles can hide holes in the pavement, broken glass and other nasty surprises. Avoid puddles or go through them slowly.
- **Metal, Paint and Wood** – Manhole covers, tracks, metal plates and lines painted on roads are all very slippery when wet. Wooden surfaces also become slippery. Slow down and corner carefully on all such surfaces.
- **Visibility** – Visibility is poor in wet weather; wear bright yellow or fluorescent outer garments so that drivers can see you better.

Cold Weather

When the temperature drops to freezing or below, traction problems, and the dangers of hypothermia and frostbite appear. *Ride carefully and slower than normal* in these conditions.

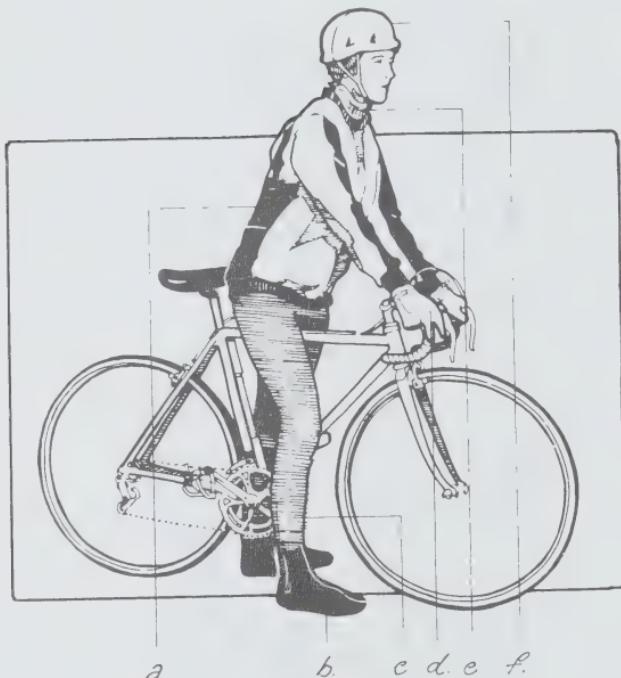
- **Frost and Black Ice** – Overnight freezes can leave patches of frost and black ice on the road.

On frost, ride slowly, using a medium gear and the rear brake only. Corner carefully, without leaning. You will have some traction, but not a lot.

On black ice, go straight. Avoid any braking or turning. You have no traction at all. On extensive patches, walk your bike. Be especially careful crossing bridges.

- **Snow** – Even hardpacked snow provides some traction, but it is limited and your wheels slide around as you ride. Go slowly in a medium gear and corner carefully, without leaning. Use your front brake delicately.

- **Tires for Winter** – On snow and ice, fat, heavily treaded tires are best. The “knobbies” on many mountain bikes are the best of all in many snow conditions. Thin tires can be unstable and make pedalling difficult.
- **Hypothermia and Frostbite** – When you ride in cold weather, your extremities lose heat fast, and frostbite and hypothermia can set in. Wear good headgear, mitts and footgear, and keep rides short.

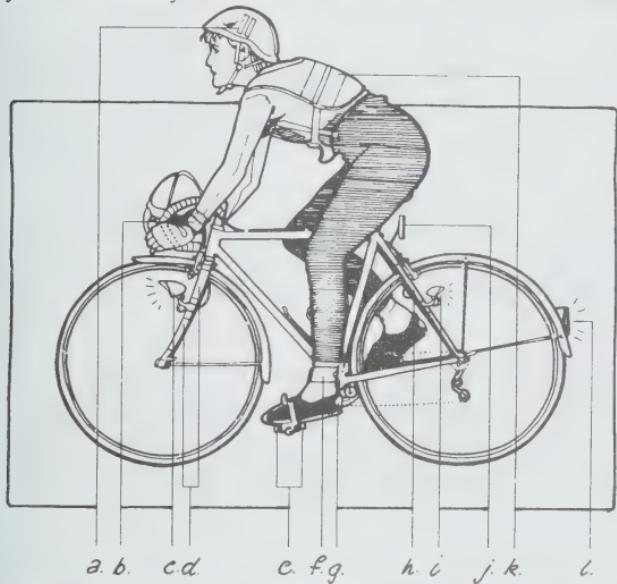


a) Wool and nylon winter jacket b) Shoe covers c) Tights
 d) Gloves with inserts e) Turtleneck f) Wool hat that covers ears under helmet.

Because bicycles are one of the smallest vehicles on the road, it is important for cyclists to be as visible as possible to other road users at all times. This means wearing white or bright coloured clothing when you ride. A white or yellow helmet, particularly one with reflective material on it also helps to make you more visible.

Cycling at Night

Many of the collisions between motor vehicles and bicycles which occur at night happen because motorists did not see the cyclist. The key to safe night cycling is to *be visible*. Follow the rules of the road, just as in daytime, but pay extra attention to vehicles around you. Be ready to deal with drivers who do not see you.



- a) Reflective material on helmet
- b) Reflective wristband
- c) Front light
- d) Reflective tape on forks
- e) Pedal reflectors
- f) Reflective ankle bands
- g) Reflective heel patches
- h) Reflective tape on seat stay
- i) Rear light
- j) Rear reflector
- k) Reflective vest
- l) Fender mounted light or reflector.

Lighting

By law your bicycle must have a white front light and a red rear light or red rear reflector when you ride one-half hour before sunset and one-half hour after sunrise.

Pedal reflectors, and the required white reflective strips on the front forks plus red reflective strips on the rear stays also help.

Clothing can improve or reduce visibility. Yellow and white stand out best at night; dark colours disappear.

Reflective bands on wrists make your hand signals more visible. Bands of reflective material on your ankles or reflective material on your heels or clothes help others see you.

If you use a generator light, try to avoid stopping completely while making vehicular left turns, or use supplemental lighting and make sure you wear reflective material. Remember, that your light goes out and you disappear when you stop.

Dawn and Dusk

Dawn and dusk are especially dangerous times to ride. When the sun is very low, light comes directly into your eyes and the eyes of drivers, causing short periods of blindness. Sunglasses, especially polarized ones, help.

When riding directly into or away from the sun at this time, leave extra room and be ready for sudden stops or swerves by traffic around you. Scan intersections especially carefully.

Being Heard

Bicycles are very quiet vehicles, so it is important to warn others of your approach. This includes motor vehicle drivers, as well as pedestrians, joggers, dog walkers and others who share recreation paths. By law (HTA 75(5), all bikes must have working bells or horns to announce your approach.

At times it is just as effective and more courteous to shout something like “passing on the left” when overtaking other cyclists or pedestrians.

Cycling in rural areas or touring can be one of the most pleasant and exhilarating cycling experiences. Aside from practising the same safe riding habits as when riding in city areas, there are certain precautions to take and hazards to be aware of to ensure a smooth trip.

Carrying a Load

While there are a number of extra items you may need to take with you when touring, remember that riding with a load affects your stability and increases stopping distance. If you have a few loaded packs try to distribute the weight evenly.

Before going on your trip practise balancing with the kind of load you will be carrying and making appropriate adjustments in your stopping distance. Where possible, load the bicycle rather than your body.

Maintaining Your Bicycle

Making sure your bicycle is in top shape is most important before starting out on a ride. Refer to the Checklist in Chapter 2.

To be prepared for a breakdown, put together a kit containing the key tools required for an emergency repair: for example, a tire patch kit, a spare tube, a bicycle pump, a small screw driver, and wrenches suitable for tightening bolts of various sizes.

Planning Your Route

It's a good idea to take a little time before you leave to determine the best route. When you have a choice, consider a route that is less travelled by motor vehicles, has few hills and good road surfaces.

Always have a map of the area in case you get off course. Also, remember to check that the route you have chosen is accessible to bicyclists.

Bicycles are prohibited on controlled access and freeway type highways such as the 400 series, the Queen Elizabeth Way, and the Ottawa Queensway. If you are in doubt about the route you have chosen contact local authorities, police or the Ministry of Transportation.

Dealing With Other Vehicles

As in urban areas, drive as close as practical to the right side of the road, signal and shoulder check before attempting a lane change and obey all traffic signals, signs and laws.

In less densely populated areas, motorists may not be anticipating cyclists, so drive defensively. On two lane highways, watch out for motorists travelling in the opposite direction overtaking other motorists by moving into your lane. Because bicyclists are relatively small, they often can't be seen from a distance.

When approaching sharp corners it is a good idea to swing wide *slightly* in order to be visible to other vehicles as long as possible.

The crest of a hill can be dangerous. When going over the crest of a hill, make sure you are as close to the right shoulder as possible since cars from behind will not see you.

Anticipate such situations and take steps to make yourself more visible by wearing brightly coloured clothing and helmet.

Taking Care of Yourself

It is wise to train for long trips to ensure that you build the physical stamina required. Practise riding steadily in a medium gear where you can spin your legs quickly. A good quick spin gives you the best combination of endurance and speed. Try to pedal between 75 and 100 rpm.

Be sure that you wear clothing appropriate for the weather.

Take care of your body especially in hot weather by drinking water often and eating every two hours.

Travelling in Groups

There are a few safety tips to keep in mind when travelling in groups.

Travel in single file on the road.

Keep at least a metre apart from other bikes in your group; keep several lengths apart when going downhill at high speed.

If you are travelling with a large group, it is wise to cycle in small groups of about four to six. Keep about a kilometre between groups so traffic can pass.

Dealing with Dogs

Dogs can be a hazard if they begin to chase you. Make sure that you steer clear of the dog. Stay calm, and if necessary talk to the dog in a firm voice. If the dog starts to attack you, get off your bicycle and keep it between you and the dog.

Your bicycle is a vehicle under the Ontario Highway Traffic Act (HTA). This means that, as a bicycle rider, you have the same rights and responsibilities to obey all traffic laws as other road users.

You must stop for red lights (HTA 144) and stop signs (HTA 136) and comply with all other signs.

Ride only in the designated direction on one way streets (HTA 153).

Section 147 of the HTA states that any vehicle moving slower than the normal traffic speed shall drive in the right-hand lane, or "as close as practicable to the right" edge of the road, except when preparing to turn left or when passing another vehicle.

This means you must ride far enough out from the curb to maintain a straight line, clear of hazardous sewer grates, debris, potholes and parked car doors.

You may occupy any part of a lane when your safety warrants it. Never compromise your safety for the convenience of a motorist behind you.

Before you turn, look behind you and signal to indicate your turns. Cyclists now have the option of extending their right arm to signal a right turn (HTA 142).

Stop for pedestrians at crosswalks (HTA 140), and walk your bike across crosswalks (HTA 144(29)).

Stop two metres behind streetcar doors and wait until the passengers have boarded or reached the curb (HTA 166).

Stop for stopped school buses when the upper alternating red lights are flashing and the stop arm is out (HTA 175(12)).

Laws specific to bicycles are:

Lights – Your bike must have a white front light and a red rear light or reflector if you ride between 1/2 hour before sunset and 1/2 hour after sunrise.(HTA 62)

Reflective tape – A bicycle must be equipped with white reflective tape on the front forks and red reflective tape on the rear forks. (HTA 62(17))

Bell – Your bike must be equipped with a bell or horn in good working order. (HTA 75(5))

Brakes – Your bicycle must have at least one brake system on the rear wheel. When you put on your brakes, you should be able to skid on dry, level pavement.(HTA 64)

Identification – Cyclists must identify themselves when stopped by the police for breaking traffic laws. The police officer will ask you for your correct name and address.(HTA 218)

Crossovers – A bicyclist is not permitted to ride a bicycle in a pedestrian crosswalk or crossover. (HTA 140 and 144)

Sidewalks - In some places in Ontario, only bicycles with 61 cm (24 in.) wheels or smaller, and some 3 wheeled bicycles, may be ridden on the sidewalk. Check the bylaws in your area.

Expressways – Bicycles are prohibited on expressway and freeway type highways such as Highway 400, the Queen Elizabeth Way, the Ottawa Queensway and on roads where “No bicycle” signs are posted.(HTA 185)

Passengers – No passengers are allowed on a bicycle designed for one person. (HTA 178)

Attaching to a vehicle – You are not permitted to attach yourself to the outside of another vehicle or streetcar for the purpose of “hitching a ride”. (HTA 178)

Dismounted bicyclist – As a bicyclist, you are required to ride your bicycle on the right-hand side of the road . If you are walking your bike on a highway where there are no sidewalks, you are considered a pedestrian and you should be walking on the left-hand side of the road facing traffic. However, if it is not safe for you to cross the road to face traffic, you are permitted to walk your bike on the right-hand side of the road. (HTA 179)

Helmets – As of October 1, 1995, it is the law in Ontario for every cyclist under the age of eighteen (18) to wear an approved bicycle helmet. (HTA 104) Parents or guardians shall not knowingly permit cyclists under sixteen years of age to ride without a helmet. (HTA 104).

Road Safety

It starts
with you

